

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

60. – 104. (Canceled)

105. (New) A transmitting apparatus for communicating information in a multi-node communication network, comprising:

a sequence generator for generating a Gold code by combining contents of specified stages of a first shift register with contents of specified stages of a second shift register; and
a transmitter for simultaneously transmitting I and Q signals during a specified time interval, said I signal including a first spreading code sequence, of a first subset from a set of spreading code sequences, which is derived from said Gold code and said Q signal including a second spreading code sequence, of a second subset from the set of spreading code sequences, which is derived from said Gold code and different from said first spreading code sequence;

wherein at least one of said first and second subsets from the set of spreading code sequences includes more than one spreading code sequence and said set of spreading code sequences being selected from a plurality of subsets of said set of spreading code sequences associated with said transmitting apparatus.

106. (New) The apparatus of claim 105, wherein the simultaneously transmitted I and Q signals are configured to respectively carry data information and control information.

107. (New) The apparatus of claim 105, wherein the spreading code sequences are selected based upon a particular data rate.

108. (New) The apparatus of claim 105, further comprising a modulator for modulating the first and second spreading code sequences onto corresponding carriers of the same frequency having different phases.

109. (New) The apparatus of claim 108, wherein the modulator uses phase shift keying (PSK).

110. (New) A method for communicating information in a multi-node communication network, comprising:

generating a Gold code by combining contents of specified stages of a first shift register with contents of specified stages of a second shift register; and

transmitting I and Q signals during a specified time interval, said I signal including a first spreading code sequence, of a first subset from a set of spreading code sequences, which is derived from said Gold code and said Q signal including a second spreading code sequence, of a second subset from the set of spreading code sequences, which is derived from said Gold code and different from said first spreading code sequence;

wherein at least one of said first and second subsets from the set of spreading code sequences includes more than one spreading code sequence and said set of spreading code sequences being selected from a plurality of subsets of said set of spreading code sequences associated with said transmitting apparatus.

111. (New) The method of claim 110, wherein the simultaneously transmitted I and Q signals are configured to respectively carry data information and control information.

112. (New) The method of claim 110, wherein the spreading code sequences are selected based upon a particular data rate.

113. (New) The method of claim 110, further comprising modulating the first and second spreading code sequences onto corresponding carriers of the same frequency having different phases.

114. (New) The method of claim 113, wherein said modulating includes phase shift keying.

115. (New) A transmitting apparatus for transmitting information in a multi-node communication network, comprising:

an almost orthogonal code sequence generator that generates a set of almost orthogonal code sequences and a Gold code sequence, said set of almost orthogonal code sequences being selected from a plurality of subsets of a set of almost orthogonal code sequences associated with the transmitting apparatus; and

a transmitter for simultaneously transmitting an I signal and a Q signal during a specified time interval, said I signal including said Gold code sequence and a first subset of said set of almost orthogonal code sequences and said Q signal including said Gold code sequence and a second subset of said set of almost orthogonal code sequences not identical

with said first subset, wherein at least one of said first and second subsets from the set of almost orthogonal code sequences includes more than one almost orthogonal code sequence.

116. (New) The transmitting apparatus of Claim 115 wherein said I signals carry data information and said Q signals carry control information.

117. (New) The transmitting apparatus of Claim 115 wherein said I signals carry control information and said Q signals carry data information.

118. (New) The transmitting apparatus of Claim 115 wherein said I signals carry data information and said Q signals carry data and control information.

119. (New) The transmitting apparatus of Claim 115 wherein said first subset contains two or more code sequences.

120. (New) The transmitting apparatus of Claim 115 wherein a code sequence from said first subset is based upon a particular data rate.

121. (New) The transmitting apparatus of Claim 115 wherein said second subset contains two or more code sequences.

122. (New) The transmitting apparatus of Claim 115 wherein a code sequence from said second subset is based upon a particular data rate.

123. (New) The transmitting apparatus of Claim 115, further comprising:
a modulator that modulates said I signals and said Q signals onto corresponding carriers of the same frequency having different phases.

124. (New) The transmitting apparatus of Claim 123, wherein said modulator uses phase shift keying.

125. (New) A method for transmitting information in a multi-node communication network, comprising:

generating a set of almost orthogonal code sequences, said set of almost orthogonal code sequences being selected from a plurality of subsets of a set of almost orthogonal code sequences;

generating a Gold code sequence; and

simultaneously transmitting an I signal and a Q signal during a specified time interval, said I signal including said Gold code sequence and a first subset of said set of almost

orthogonal code sequences and said Q signal including said Gold code sequence and a second subset of said set of almost orthogonal code sequences not identical with said first subset, wherein at least one of said first and second subsets from the set of almost orthogonal code sequences includes more than one almost orthogonal code sequence.

126. (New) The method of Claim 125 wherein said I signals carry data information and said Q signals carry control information.

127. (New) The method of Claim 125 wherein said I signals carry control information and said Q signals carry data information.

128. (New) The method of Claim 125 wherein said I signals carry data information and said Q signals carry data and control information.

129. (New) The method of Claim 125 wherein said first subset contains two or more code sequences.

130. (New) The method of Claim 125 wherein a code sequence from said first subset is based upon a particular data rate.

131. (New) The method of Claim 125 wherein said second subset contains two or more code sequences.

132. (New) The method of Claim 125 wherein a code sequence from said second subset is based upon a particular data rate.

133. (New) The method of Claim 125, further comprising the step of:
modulating said I signals and said Q signals onto corresponding carriers of the same frequency having different phases.

134. (New) The method of Claim 133, wherein said modulating step uses phase shift keying.